Metastatic Adenocarcinoma of Pituitary Gland

Case Studies [1] | September 26, 2012
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Case History: A 55-year-old female presented with a one-month history of excessive thirst and polyuria. She had received an operation for adenocarcinoma of the lung about 21 months ago, with the final pathological staging being T2N0M0.

Figure 1: T2WI axial
Figure 2: T1WI axial
Figure 3: T1+C Coronal view
Findings: Her cranial MRI for newly developed symptoms disclosed a 1.2 x 1.2 x 2.2 cm sellar and suprasellar mass which extended and involved infundibulum. The tumor was isointense on both T1-weighted (T1WI) and T2-weighted (T2WI) images with small foci of hyperintensities. After Gd-DTPA administration, contrast MRI revealed well but slightly heterogenous enhancement and findings in the rest of the brain were unremarkable. Adjacent clivus, cavernous sinus, and optic chiasm were intact.

Diagnosis: Metastatic adenocarcinoma of pituitary gland.

Discussion: Metastases to the sellar region account for approximately 1 percent of sellar masses on which a biopsy was performed, and by far most commonly arise from breast and lung adenocarcinomas. Pituitary metastases were reported to occur in 3 percent to 23 percent of cancer patients in an autopsy series. Solitary pituitary metastasis is uncommon and was reported to occur in about 3.1 percent sellar and juxtasellar abnormalities by MRI. Apparent symptoms from metastasis to pituitary gland are uncommon because widespread metastatic disease or overwhelming systemic complications of original malignancy might mask symptoms of hypopituitarism. The most common presenting symptoms: diabetes insipidus, anterior hypopituitarism, headache, visual defects, and ophthalmoplegia. The prognosis of patients with
pituitary metastasis is poor, and the mean survival length is six to seven months in previous clinical series. It is not because of the location per se but because of the extent of systemic disease. Differential diagnosis: There are more than 15 diseases for a sellar/suprasellar mass. The most common five account for more than 75 percent of all suprasellar masses in adults, and most other lesions stand for less than 1 percent to 2 percent each, including pituitary adenoma which is the most common one, meningioma, craniopharyngiomas, hypothalamic/chiasmatic glioma, and aneurysm. Diagnostic clues: Imaging findings prefer the diagnosis of metastasis for a sellar/suprasellar mass: Loss of posterior bright spot of normal pituitary gland Infiltration of stalk causing thick stalk Isointensity on both T1- and T2-weighted MR images Respect the diaphragm” early in the disease: Metastatic tumor usually had rapid growing and does not have enough time length to expand the diaphragm sellae, as contrast to the enlarged diaphragm in pituitary adenoma Invasion of juxtasellar structures such as cavernous sinus, sphenoid sinus or clivus Usually suprasellar or combined intrasellar and suprasellar in position: probably due to lack of blood-brain-barrier in these suprasellar structures.

References:

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